

Abstract of the Disclosure

The invention provides a method and system for collecting aggregate information about network traffic, while maintaining processor load relatively constant despite substantial variation in network traffic, and capable of substantially accurate frequency measurement even for relatively infrequent events. A packet monitoring system includes an input port for receiving network packets, a sampling element for selecting a fraction of those packets for review, and a queue of selected packets. The packets in the queue are coupled to a packet-type detector for detecting packets of a selected type; the system applies a measurement technique for determining a frequency measure for those detected packets. The system includes a feedback technique for adaptively altering the sampling rate fraction, responsive to the queue length and possibly other factors, such as processor load or the detected frequency measure. The measurement technique also determines an error range and a measure of confidence that the actual frequency is within the error range of the measured frequency. The system can detect packets of multiple selected types essentially simultaneously, and provide measured frequencies and error ranges for all of the multiple selected types at once. Also, the measurement technique is selected so as to impose relatively light processor load per packet.